Chemistry. — *"Additive compounds of s. trinitrobenzene."* By Prof. P. VAN ROMBURGH. (Communicated by Prof. C. A. LOBRY DE BRUYN).

(Communicated in the meeting of February 27, 1904.)

A communication from JACKSON and CLARKE [1]) on additive compounds of substituted nitrobenzenes and dimethylaniline and another from HIBBERT and SUDBOROUGH [2]) on additive compounds of s. trinitrobenzene and alkylated arylamines induces me to call attention to the fact that I have been engaged for a long time with the study of the additive compounds of m. dinitro- and s. trinitrobenzene. In addition to those which I have described in former papers [3]) I have prepared a large number of compounds with different aromatic amines (such as toluidines, phenylendiamines, benzidine and their alkyl derivatives) which will be fully described elsewhere as soon as the crystallographic investigation of many of these products, kindly undertaken by Dr. F. M. JAEGER, has been concluded.

Besides with benzene and naphthalene [4]), s. trinitrobenzene combines, like picric acid, with different aromatic hydrocarbons. It forms with *anthracene* fine orange-red needles (m.p. 161°), with a *methylanthracene* reddish colored needles (m.p. 138°), with *phenanthrene* an orange-yellow compound (m.p. 163°) [5]) with *fluorene* a yellow compound.

In all these compounds we find that 1 mol. of s. trinitrobenzene is combined with one mol. of the hydrocarbon.

s. Trinitrobenzene forms with α-bromonaphthalene a fine lemon-yellow compound (m.p. 139°) and a similar one with dibenzylideneacetone.

Substituted aromatic amino-compounds such as anthranilic acid, and its methylester, p. aminoacetophenone, ethyl m. and p. aminobenzoate brought together with s trinitrobenzene in alcoholic solution readily form colored well-crystallised compounds, the first two of which are colored orange and the others red. p. Aminobenzoic acid combines less readily and I have not succeeded in obtaining an additive compound with m. aminobenzoic acid, which is a stronger acid than its isomers.

Among the above compounds are some which will, presumably, prove of importance in the hands of the micro-chemist for the detection of certain substances.

1) Berl. Ber. **37**, (1904), S. 177.

2) Journ. Chem. Soc. **83** p. 1334.

3) Rec. d. Trav. chim. d. Pays-Bas **6**, 366; **7**, 3, 228; **8**, 274; **14**, 65.

4) HEPP, Ann. d. Chemie **215**, S. 376.

5) In the Dutch publication of this article, the melting point has been stated incorrectly.